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MEMOIRS

OF THE

MUSEUM OF COMPARATIVE ZOÖLOGY

AT

HARVARD COLLEGE.

VOL. XXVIII.

PLATES.

II.

CAMBRIDGE, U.S.A.
PRINTED FOR THE MUSEUM.
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CONTENTS.

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Memoirs of the Museum of Comparative Zoölogy
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IV.

THE CORAL REEFS
OF THE
TROPICAL PACIFIC.

By ALEXANDER AGASSIZ.

II. — PLATES 106 TO 199.

NIUE TO LADRONES.

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CAMBRIDGE, U.S.A.:
Printed for the Museum.
February, 1903.

PLATE 106.

Plate 106.

1. Aitutaki seen from the northeast, looking over the barrier reef.

2. Terraces on the west shore of Niue, north of Avatele.

3. Bare, pitted and honeycombed terraces on the southwest point of Niue.

1, 2, W. McM. W.; 3, A. G. M., Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE 107.

Plate 107.

NIUE.

1. Terraces on the southwest face of the island.

2. Buttresses of elevated coralliferous limestone, near Alofi landing.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 108.

Plate 108.

NIUE.

1. Buttresses on the west face of the island, north of Alofi landing.

2. Buttresses on the west face of the island, looking south of Alofi landing.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 109.

PLATE 109.

Buttresses of elevated coralliferous limestone on the west face of Niue, near Alofi landing.

A. G. M., Phot.

HELIOTYPE CO., BOSTON.

PLATE 110.

PLATE **110**.

Undercut and elevated coralliferous limestone cliffs on the west face of Niue, riddled with caverns and partly covered by stalactites, near Alofi landing. W. McM. W., Phot.

HELIOTYPE CO., BOSTON.

PLATE **111**.

Plate **111**.

EUA.

1. Indistinct terraces on the west side of the island, south of Ohonua. A. G. M., Phot.
2. East face of the island looking south from near the north point.
3. Cliffs of elevated coralliferous limestone on the north point of the island seen from the east.

2, 3, W. McM. W., Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE **112**.

Plate 112.

EUA.

1. Cliffs and terraces on the east face of the island, near the north point.

2. Cliffs and terraces with lines of caverns and stalactites, on the east face of the island, about three miles south of the north point. Five terraces can be distinguished.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 113.

Plate 113.

EUA.

1. Undercut cliffs with lines of caverns and terraces, near the central and highest part of the east face of the island.

2. Elevated coralliferous limestone cliffs on the east face of the island. Fig. 2 follows Fig. 1, south.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 114.

Plate 114.

EUA.

1. Looking from the summit of the western ridge of the island towards the gap near the landing place on the west side, across the central valley to the northern part of the eastern ridge.

2. Looking eastward, from the third terrace on the western ridge, across the central valley towards the southern part of the eastern ridge; peaks of the fifth or sixth terrace on the right.

3. From the same point as Fig. 2, looking east, across the central valley, towards the middle of the eastern ridge.

1–3, W. McM. W., Phot.

1

2

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HELIOTYPE CO., BOSTON.

PLATE **115**.

Plate 115.

TONGATÁBU.

1. Entering the harbor of Nukualofa, looking south into the gap between Nukuleka and Holevai.

2. Fanga Kakau, shallow lagoon south of Nukualofa.

3. Looking east from the landing at Nukualofa, towards Pangaimotu, Makahaa, Velitoa, and Fafa. Natives fishing on the flats.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON

3

PLATE 116.

Plate 116.

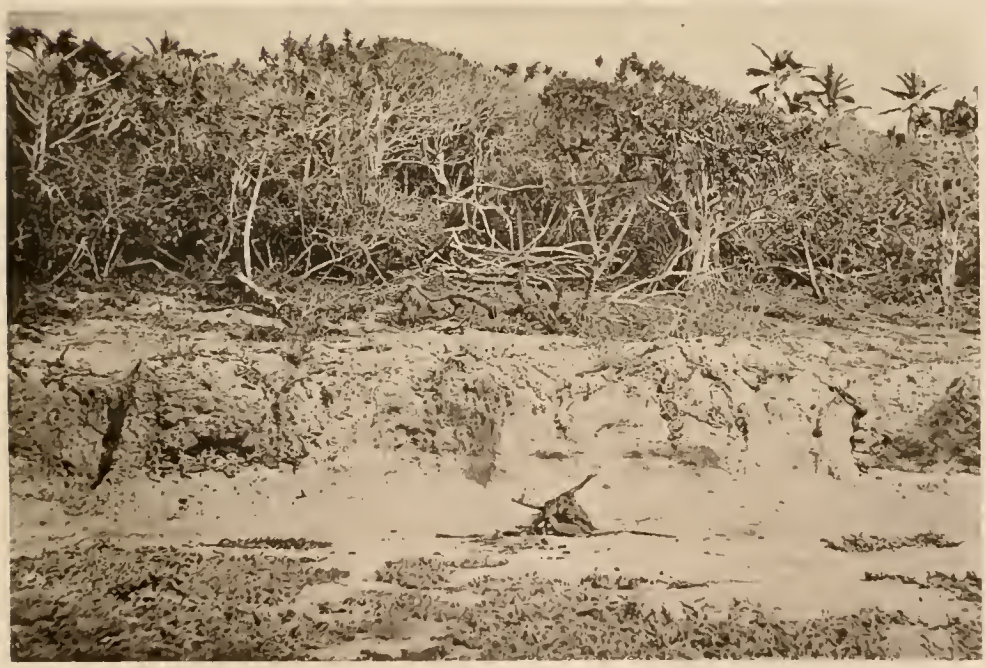
TONGATÁBU.

1. Lagoon shore to the east of Nukualofa.

2. Elevated limestone cliffs on the southwest face of the island.

1, 2, Martin, Phot.

1



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HELIOTYPE CO., BOSTON.

PLATE 117.

Plate 117.

TONGATÁBU.

1. Blow holes on the outer edge of the reef flat platform at Houma Toloa, south point of the island (Cook's Point).

2. Undercut cliffs of elevated coralliferous limestone with lines of caverns and stalactites, on the Liku, or windward face of the island.

1, 2, Martin, Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 118.

Plate 118.

1. Blow hole at Houma Toloa, Tongatábu. Martin, Phot.

HELIOTYPE CO., BOSTON

PLATE **119**.

Plate 119.

NOMUKA.

1. Looking southwest from the base of Mata Kalai across the lagoon of the island, Nomuka Iki in the distance.

2. From the same point, looking across the widest part of the lagoon of the island towards Motu Tafisi and Motu Loto.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 120.

PLATE **120**.

VAVAU.

1. Looking northeast into the passage leading to the harbor of Neiafu, from off Fata Point.

2. Limestone bluffs to the south of Muitoulo Point on the west shore of Vavau, Houmafakalele Point in the distance, seen from the west. W. McM. W., Phot.

3. Looking east across Neiafu Neck towards the islands on the east face of Vavau.

1, 3, A. G. M., Phot.

1

2

3

HELIOTYPE CO., BOSTON

PLATE 121.

Plate 121.

VAVAU.

1. The west face of Hunga Island seen from the north, off the entrance to Vavau (Faihava).

2. Elevated coralliferous limestone cliffs and terraces to the east of Fata Point.

3. Neiafu Harbor, Talau and Moungalafa terraces seen from Holobeka

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

3

PLATE 122.

Plate 122.

1. Off the Talau, looking southeast towards Moungalafa (Vavau).

2. A corner of Vavau Harbor seen from the Talau. Martin, Phot.

3. Vegetation along the road on the summit of the third terrace, western ridge of Eua.

1, 3, W. McM. W., Phot.

1

2

3

HELIOTYPE CO., BOSTON.

PLATE 123.

Plate 123.

VAVAU.

1. Ahanga Passage, looking east.

2. Opening of Ahanga Passage into Neiafu Harbor.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE **124**.

Plate 124.

VAVAU.

1. Elevated coralliferous limestone cliffs on the north side of Vavau. Martin, Phot.

2. Looking down upon the cliffs at Matakinina Point, seen from the east.

W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 125.

PLATE 125.

Limestone bluffs on the north side of Vavau. Martin, Phot.

HELIOTYPE CO., BOSTON.

PLATE 126.

Plate 126.

KAMBARA.

1. Inner slope of the rim of the sink on the southwestern face of the island. The slope in the foreground is composed of volcanic rocks; the rim in the background is made up of elevated limestone.

2. Looking east across the sink of the island, from the summit of the volcanic hill on the west side of the island.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 127.

Plate 127.

KAMBARA.

1. Looking northeast across the sink of the island, from the summit of the volcanic hill on the west face. Wangava in the distance.

2. Gap on the west face of the island, at the junction of the volcanic hill and of the elevated coralliferous limestone rim of the island. Wangava in the distance.

1, 2, W. McM. W., Phot.

1

HELIOTYPE CO., BOSTON.

2

PLATE 128.

Plate 128.

1. A bend in the Rewa, southern face of Viti Levu.
2. Ba River, northern face of Viti Levu.
3. Volcanic islet, an outlier on the reef flat platform of the northern face of Rotumah.

1

2

3

HELIOTYPE CO., BOSTON.

PLATE 129.

Plate 129.

1. South end of Nurakita (Ellice Islands), looking west.
2. Nukufetau seen approaching it from the south.
3. Looking across the east face of the northern part of Nukufetau atoll.
4. The Motungie Islands at the southern extremity of the atoll of Funafuti.

1, 3, A. G. M.; 2, 4, W. McM. W., Phot.

1

2

3

4

HELIOTYPE CO., BOSTON.

PLATE 130.

Plate 130.

FUNAFUTI.

1. Gap on the east face of the atoll between Telele and Funafara; the islands of Tutanga and Falaoingo in the rear.

2. Gap on the east face of the atoll between Funafara and Lua Motu. In the distance is seen Tefala Island.

3. Gap on the east face of the atoll between the north end of Lua Motu and Mateika.

4. Northern extremity of Funamanu islet, on the east face of the atoll.

1, 2, W. McM. W.; 3, 4, A. G. M., Phot.

1

2

3

4

HELIOTYPE CO., BOSTON.

PLATE 131.

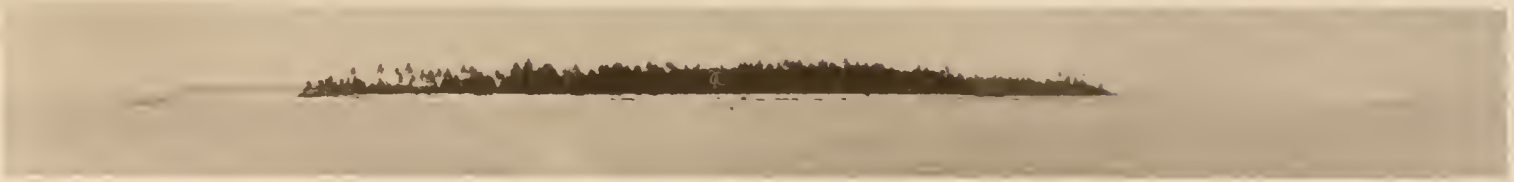
Plate 131.

FUNAFUTI.

1. South end of Funafuti Island, with submerged reef to the south of Matafuana.
2. Northeast face of the atoll, showing Amatuku and Mulitefala Islands.
3. Gap between Amatuku and Mulitefala south of the northern entrance to the atoll; the island of Tebuka is seen in the distance through the gap, and to the right Fualifeke.
4. Te Afualiku, sand key north of the entrance, seen when approaching the southern horn of the north passage.

1, 2, A. G. M.; 3, 4, W. McM. W., Phot.

1



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HELIOTYPE CO., BOSTON.

PLATE 132.

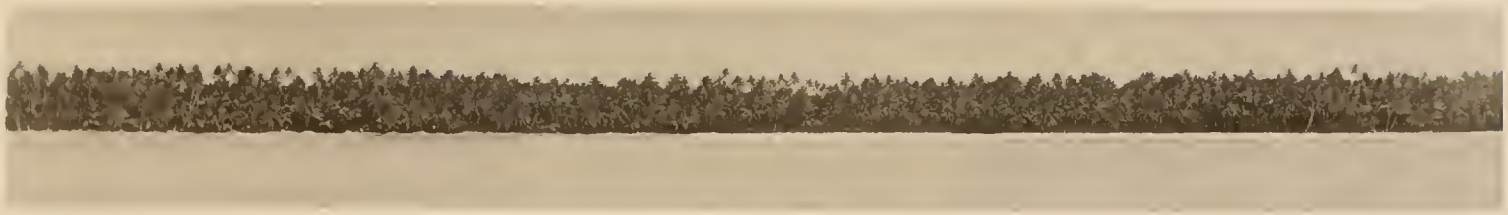
Plate 132.

FUNAFUTI.

1. Lagoon beach at Fongafale seen from the anchorage.

2. Sea face of the island north of the boring station north of Fongafale village.

1, 2, A. G. M., Phot.



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HELIOTYPE CO., BOSTON.

PLATE 133.

Plate 133.

FUNAFUTI.

1. Elevated recent reef rock conglomerate on the lagoon side of the northern part of Amatuku.

2. Gap between Funafuti and Tengako covered with rubble and coarse shingle, Tebuka Island in the distance.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 134.

Plate 134.

FUNAFUTI.

1. Northern extremity of Amatuku, looking towards Mulitefala. W. McM. W., Phot

2. Looking north from the northern extremity of Amatuku towards the northern end of Mulitefala. A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 135.

Plate 135.

FUNAFUTI.

1. Sea face, northern end of Tengako, looking north, Amatuku in the distance.

2. Eroded sea face platform, eroded elevated beach rock, and reef rock outliers at the north end of Funafuti Island.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 136.

Plate 136.

FUNAFUTI.

1. Sea face on the northern part of Tengako, with elevated reef rock outliers.

2. Looking towards Amatuku on the sea face of the north point of Tengako. Reef flat platform covered with beach rock and reef rock slabs and boulders.

1, 2. W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 137.

Plate 137.

FUNAFUTI.

1. Southern part of Taiisale, the secondary lagoon to the east of Fongafale village.
2. Northern part of Taiisale.
3. Northern part of Taiisale near the Borehole.

1 3, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

3

PLATE 138.

Plate 138.

TAPETEUEA.

1. Narrow island on the east face of the atoll, towards the northern part.
2. Islands, islets, and bars south of the central part on the east face of the atoll.
3. East face of the long island near the north end of the atoll.
4. Islands on the east face of the northeastern part of Apamama.

1–4, W. McM. W., Phot.

1

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4

HELIOTYPE CO., BOSTON.

PLATE 139.

Plate 139.

APAMAMA.

1. Gap between two islands on the east face of the atoll.

2. Bay in the large island on the east face of the atoll.

3. Sea face of island on the south side of the atoll.

4. Reef flat platform lagoon on the east face about two miles from the southern point of Maiana.

1–4, W. McM. W., Phot.

1

2

3

HELIOTYPE CO., BOSTON.

4

PLATE 140.

Plate 140.

1. Narrow part of land rim of Maiana near the point of the eastern horn of the atoll.

TARAWA.

2. Islands and islets on the east face of the atoll.

3. Looking from the sea into gap between islands on the east face of the atoll.

4. Looking from the sea into gap and bay between islands on the south face of the atoll.

1–4, W. McM. W., Phot.

1

2

3

HELIOTYPE CO., BOSTON.

4

PLATE **141**.

Plate 141.

TARAWA.

1. Sea face of island on the south side of the atoll.
2. Islands, islets, and bars on the south face of the atoll.
3. Islands, islets, bars and secondary lagoon on the reef flat on the south side of the atoll.
4. A similar view with islands of the east face of the atoll in the distance.

1, 2, A. G. M.; 3, 4, W. McM. W., Phot.

1

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3

HELIOTYPE CO., BOSTON.

4

PLATE 142.

Plate 142.

TARAWA.

1. Lagoon shore and flat, looking south.

2 Lagoon side of islands and flat in rear of village.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE **143**.

Plate 143.

TARAWA.

1. Looking west along the lagoon shore, over the flat.

2. Sink in the lagoon, near the village.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE **144**.

Plate 144.

TARAWA.

1. Sink in the lagoon, looking towards the village.

2. Lagoon side of the atoll, looking north along the sink.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 145.

Plate 145.

1. Looking into the lagoon across the gap north of the small island, at the north point of Apaiang.
2. Southeast horn of Apaiang seen from the south.
3. Sea face of island on the south face of Apaiang.
4. Sink in the lagoon of Tarawa, near the village, looking north.

1–3, W. McM. W.; 4, A. G. M., Phot.

1

2

3

4

HELIOTYPE CO., BOSTON

PLATE 146.

Plate 146.

MARAKI.

1. Entrance into the lagoon, west face of the atoll.

2. South point of the atoll, looking northeast.

3. High sand beach and wide reef flat, on the north point of the west face of the atoll.

1-3, A. G. M., Phot.

1

2

3

HELIOTYPE CO., BOSTON.

PLATE 147.

Plate 147.

MARAKI.

1. Steep sand and shingle beach and wide steep reef flat, on the west face of the atoll near trader's house, north of entrance to the atoll.

2. Steep shingle and boulder beach north of Fig. 1, reef flat very narrow.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 148.

Plate 148.

MARAKI.

1. Looking into the lagoon over the narrow land rim on the south face of the atoll, high sand beach and narrow reef flat; land rim of the east face seen in the distance.

2. Another view of the same land rim, somewhat more to the westward; land rim of the east face seen in the distance.

1, 2, W. McM. W., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE **149**.

Plate 149.

MARAKI.

1. Looking through a gap across the lagoon over the narrow land rim of the southern face of the atoll, the eastern land rim seen in the distance; the secondary land rim in the middle ground. W. McM. W., Phot.

2. Secondary land rim on the outer edge of the lagoon flat and secondary lagoon; a second line of islands will form the third land rim; the east face of the atoll seen in the distance. A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 150.

Plate 150.

MARAKI.

1. Looking over the low land rim on the southwest horn of the atoll, across the lagoon towards the land rim of the east face. W. McM. W., Phot.

2. Bars and secondary land rim, with lagoon flat, looking north along the lagoon face of the western land rim. A. G. M., Phot.

1

HELIOTYPE CO., BOSTON

2

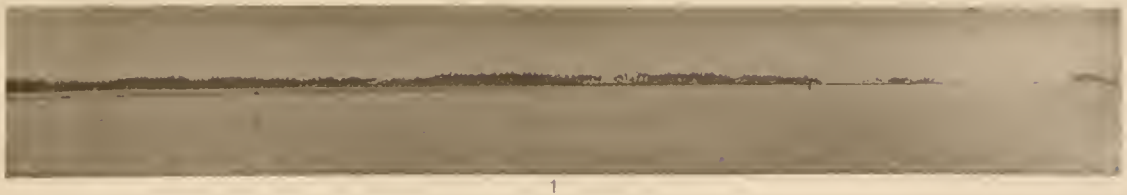
PLATE 151.

Plate 151.

TARITARI.

1. Flat to the west of Butaritari, looking towards Passage Point.
2. Flat to the east of Butaritari, looking northeast.
3. Sand flats off Butaritari, between the anchorage and the shore.
4. Eastern horn of Taritari, south of the gap between the villages of Kenea and Tanimaiaki.

1, 2, W. McM. W.; 3, 4, A. G. M., Phot.



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HELIOTYPE CO., BOSTON

PLATE 152.

Plate 152.

TARITARI.

1. Looking north through the gap (Pl. 151, fig. 4), in the centre of the southeast face of the atoll.

2. Islet in the same gap (Keuea gap), showing lines of beach rock boulders and slabs, running at right angles to the sea face.

3. Bay on the sea face of the land rim to the west of Tanimaiaki village.

4. Looking through a narrow gap on the sea face of the land rim of Butaritari Island about one mile west of Tanimaiaki village.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

1

2

3

4

HELIOTYPE CO., BOSTON

PLATE 153.

Plate 153.

TARITARI.

1. Islands and islets on the flats of Keuea gap, covered with cocoanut trees, flanked by beach rock boulder beaches, seen from the sea face.

2. Other islands in the same gap, seen from the sea face, looking towards Butaritari.

3. Islets with beach rock and shingle bars, adjoining the point south of Keuea village.

1-3, A. G. M., Phot.

1

2

3

HELIOTYPE CO., BOSTON

PLATE 154.

Plate 154.

TARITARI.

1. Entrance islet on the south face of the southwestern passage.

2. Sea face of point of Butaritari Island, north of Ukiañ̃añ̃ village.

3. Sea face of the western Pikhat Island, on the northwestern horn of the atoll, showing the passage between it and eastern Pikhat Island.

4. Steep boulder beach on the sea face of Butaritari Island, north of Ukiañ̃añ̃ village.

1, 3, W. McM. W.; 2, 4, A. G. M., Phot.

1

2

3

HELIOTYPE CO. BOSTON

4

PLATE 155.

Plate 155.

TARITARI.

1. Sea face of the land rim between the villages of Kuma and Keuea.

2. The village of Keuea seen from the lagoon flat, showing the vegetation of the western face of the land rim.

3. Wide Millepore lagoon flat off Keuea village, looking in a northwesterly direction.

1–3, A. G. M., Phot.

1

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3

HELIOTYPE CO., BOSTON.

PLATE 156.

Plate 156.

TARITARI.

1. On the point south of Keuea village, near the sea face, looking across the gap towards Butaritari.

2. On the lagoon beach south of Keuea village, looking across the lagoon opening of Keuea gap towards Tanimaiaki village.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 157.

Plate 157.

TARITARI.

1. Eastern edge of the lagoon flat on the north side of Keuea gap.

2. Shingle and sand islet on the sea face of a bay east of Keuea village.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 158.

Plate 158.

TARITARI.

1. Secondary reef flat platform lagoon formed on the sea face of Keuea gap between the flats extending across the gap and the sea wall, coral boulder and beach rock slabs dam extending from the northern side of the gap to the eastern horn of the atoll, east of Tanimaiaki village.

2. Sea wall (see Fig. 1), separating the secondary reef flat platform lagoon and the sea face of the gap, seen looking south, the lagoon face on the right, the sea face on the left.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 159.

Plate 159.

TARITARI.

1. Lagoon beach and flat to the west of Butaritari.

2. Flats on the marshy land west of Butaritari, with bars covered by cocoanut trees and scrub vegetation, on the way from Butaritari to Ukiañiñañ village, looking north.

1, 2, A. G. M., Phot.

1

2

HELIOTYPE CO., BOSTON.

PLATE 160.

Plate 160.

TARITARI.

1. Bar covered with cocoanut trees, in partly submerged flat, on the western land rim of Butaritari Island on the way to Ukiañ̃añ̃.

2. Sink to the west of Butaritari, on the way to Ukiañ̃añ̃.

1

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HELIOTYPE CO., BOSTON.

PLATE 160 *a*.

Plate **160** *a*.

1. Principal canoe passage, Tapriva (Ocean Island), Baanapa; elevated coralliferous limestone buttresses.

2. Lagoon, flanked by pitted and honeycombed pinnacles of elevated coralliferous limestone, at northeast end of (Pleasant Island) Nauru.

3. Buttresses of elevated coralliferous limestone, Tapriva (Ocean Island), Baanapa.

1-3 from Photographs by Mr. John Arundel.

1

2

3

PLATE **160** *b*.

Plate **160** *b*.

(PLEASANT ISLAND) NAURU.

1. Lagoon, flanked with pitted and honeycombed pinnacles of elevated coralliferous limestone, near the northeast extremity of the island.

2. Sink and surrounding vegetation near Ohlson's station.

1, 2 from Photographs by Mr. John Arundel.

1

2

PLATE **161**.

Plate 161.

JALUIT.

1. Looking across from our anchorage, over the narrow land rim to the south of Jabor.
2. Southeastern passage into the atoll, seen from the sea face.
3. Islands and islets on the land rim to the north of the southeast pass, looking north.
4. Islands on the north side of the southeast pass, looking north across the lagoon side of the pass.

1–4, W. McM. W., Phot.

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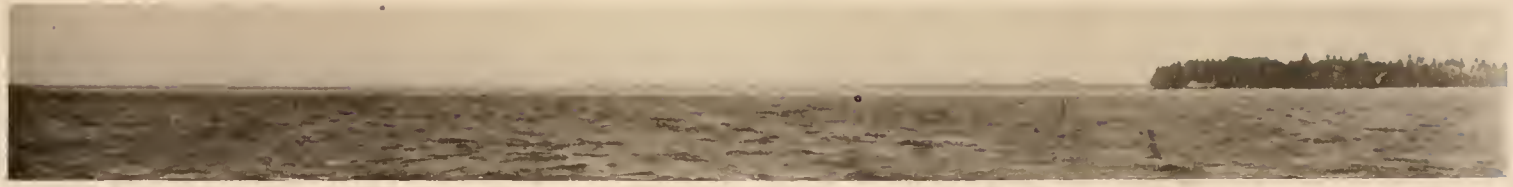

3

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HELIOTYPE CO., BOSTON.

PLATE **162.**

Plate 162.

JALUIT.

1. Beach rock bars on the lagoon face of the atoll, about two miles south of Jabor.
2. Looking across the northeast pass, along the west coast of Imrodj.
3. Beach rock bars and islets on the lagoon face of the atoll, south of the village of Jabor.
4. Beach rock flats and bars on the lagoon face south of Jabor.

1, 2, W. McM. W.; 3, 4, A. G. M., Phot.

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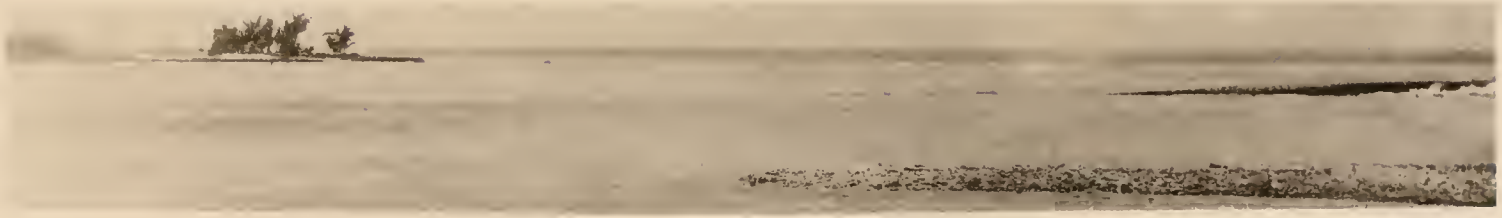

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HELIOTYPE CO., BOSTON.

PLATE 163.

Plate 163.

JALUIT.

1. Looking into the southwest pass, between Ai and Medjerrurik, seen from the sea.
2. Looking out of the southwest pass from the lagoon side.
3. Gap between Medjerrurik and Menga, seen off the southwest face of the atoll.
4. Flats in the lagoon near the southwest pass of the atoll.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 164.

PLATE 164.

JALUIT.

1. Looking across the southeast pass, from the sea face of the beach, east of Jabor, the reef flat covered by the tide, but still showing the outer edge of Nullipore knolls.

2. Reef flat and beach rock bars, on the outer edge of the reef flat platform east of the village of Jabor.

1, 2, A. G. M., Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE 165.

Plate 165.

JALUIT.

1. Sea face of land rim east of Jabor, showing high coarse shingle beach, conglomerate and breccia outliers and reef flat platform, looking south.

2. Pot-holes on the reef flat platform, of the same part of the land rim as Fig. 1, seen looking north.

1, 2, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 166.

Plate 166.

JALUIT.

1. Sink in the central part of the land rim of Enübor Island. Mrs. Brandeis' Phot.
2. Sink to the east of the village of Jabor. A. G. M., Phot.

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HELIOTYPE CO. BOSTON

PLATE 167.

Plate 167.

1. Southwest point of Nauru, seen from the south.

2. Sea face of Jaluit, south of the southeast pass, at high tide. Hütter, Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE 168.

Plate 168.

AILINGLAP.

1. South pass, between Bigatjelang Island on the north and Enüebing Island on the south, seen from the sea.

2. Looking northwest along the sea face of the western shore of Bigatjelang Island.

3. Sand and shingle beach along the northern extremity of Bigatjelang Island, seen from the sea.

4. Airek Island, south face of the land rim of the atoll.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON

4

PLATE 169.

Plate 169.

KWAJALONG.

1. Gelih Island with reef flat to the south, as seen from the west.

2. South face of the atoll, looking northwest from the extremity of Ennülabegan Island.

3. North end of Jlleginni Island, with sand bars from the lagoon or east side of the land rim, blown from the west face over the reef flat platform; a line of breakers indicates a shoal in the lagoon.

4. Island, sand bar, and wide gap on the west face of Kwajalong north of Jlleginni.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

4

PLATE 170.

Plate 170.

KWAJALONG.

1. Island north of Jerr Pass on the west face of the atoll.

2. Southern extremity of Jerr Island with submerged reef flat to the southwest face of the atoll.

3. Wotje Pass, Wotje Island to the south, Ennumet Island to the north, seen from the sea.

4. Submerged reef south of Eru Island, west face of Kwajalong.

1-3, A. G. M.; 4, W. McM. W., Phot.

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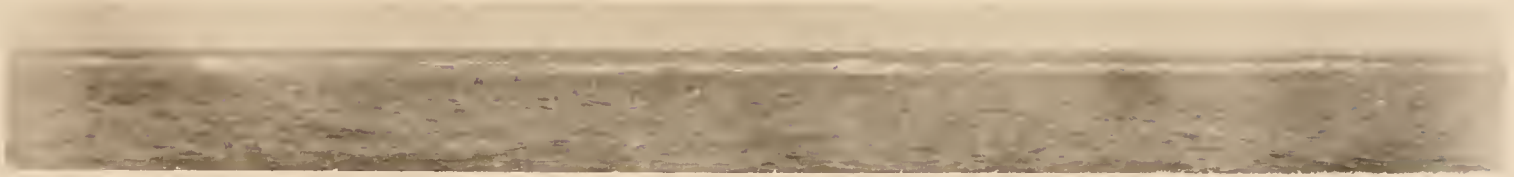

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HELIOTYPE CO., BOSTON.

PLATE **171**.

Plate 171.

1. Coming up to the northwest horn of Ailinglap from the south, showing the wide reef flat and reef flat platform lagoon; Wotja Island in the distance.

2. Reef flat platform, south shore of Rongelappelab Island, looking west, Rongelab.

3 Lagoon shore of Rongelappelab Island, looking west, showing beach rock at base of coarse coral sand beach, Rongelab.

1, 2, W. McM. W.; 3, A. G. M., Phot.

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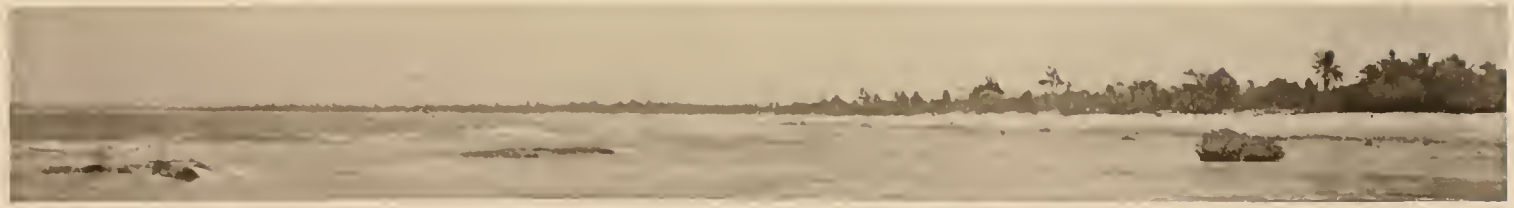

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HELIOTYPE CO., BOSTON

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PLATE **172**.

Plate 172.

RONGELAB.

1. Sand beach with beach rock and wide reef flat platform on the south shore of Rongelappelab Island, looking west. W. McM. W., Phot.

2. Sand beach with beach rock on lagoon face of Rongelappelab Island, looking west, with belt of characteristic Marshall Island vegetation on the summit of the beach.

A. G. M., Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE 173.

PLATE 173.

Vegetation in the central part of Rongelappelab Island, Rongelab, Pandanus, Scævola.

W. McM. W., Phot.

HELIOTYPE CO., BOSTON.

PLATE 174.

Plate 174.

LIKIEB.

1. West face of Kapenor Island, west face of the atoll.
2. Northern point of island at the southwest horn of the atoll.
3. Looking into the lagoon through gap between islands to the west of the South Pass, seen from the south.
4. Islet and sand bar to the east of the South Pass, seen from the lagoon side.

1–4, W. McM. W., Phot.

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HELIOTYPE CO., BOSTON.

PLATE **175**.

Plate 175.

LIKIEB.

1. Coral sand and shingle beach flanked with beach rock, on the sea face of the atoll looking north.

2. Beach rock shore on the lagoon face of the atoll, looking east.

1, 2, A. G. M., Phot.

1

HELIOTYPE CO., BOSTON.

2

PLATE 176.

Plate 176.

Small coral heads and boulders among the bushes and in the vegetation to the rear of the beach on the sea face of Likieb. A. G. M., Phot.

HELIOTYPE CO., BOSTON

PLATE 177.

PLATE **177.**

Dry sinks formed by the connection of lagoon islets, Likieb. A. G. M., Phot.

HELIOTYPE CO., BOSTON.

PLATE 178.

PLATE **178.**

Vegetation in the central part of Wotje Island, Wotje, Pandanus, Scævola.

A. G. M., Phot

HELIOTYPE CO., BOSTON

PLATE 179.

Plate 179.

WOTJE.

1. Looking across the wide gap to the north of Wotje Island, at high tide.

2. Wide gap and lagoon flat, with islet and shingle bars to the north of Wotje Island.

1, 2, A. G. M., Phot.

1

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HELIOTYPE CO., BOSTON.

PLATE **180**.

Plate 180.

WOTJE.

1. Wide gap between the northern extremity of Wotje Island and the island to the north.
2. Islands and islets to the west of Schischmarev Pass, seen from the sea.

ARHNO.

3. Islands at the base of the northern horn of the atoll, looking west, seen from the sea.
4. Looking across the gap between islands to the west of Dodo Pass, to the islands on the northwest face of the atoll.

1–4, W. McM. W., Phot.

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HELIOTYPE CO., BOSTON

PLATE **181**.

Plate 181.

ARIINO.

1. Islet west of Dodo Pass, looking across the lagoon, South Point Island in the distance.

2. Distant view of the eastern land rim of the atoll (Terranova), seen from the lagoon side of Dodo Pass.

3. Looking northeast into the extension of the lagoon into the eastern spit of the atoll, across the western angle of Terranova, showing the line of islands on the north face of the eastern extension of the lagoon, seen from our anchorage.

4. Islands on the north face of the lagoon extension into the eastern spit, seen from our anchorage in the lagoon, off Terranova.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON

PLATE 182.

Plate 182.

ARHNO.

1. West face of the northwest point seen from the west, the islands of the east face of the horn in the background.

2. West face of the horn, looking across the west flats to the single row of islands nearer the east face of the atoll.

3. Ledge on the eastern side of the entrance to Port Lottin, Kusaie.

4. Islands on a part of the south face of the atoll of Andema, seen from the southeast; Kahalape Island to the right, Paguaiganigue to the left.

1, 2, 4, W. McM. W.; 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON

4

PLATE 183.

Plate 183.

1. South point of Pachiai Island, Andema, seen from the south.

PINGELAP.

2. Southern part of the west face of Pingelap Island.

3. Looking into the lagoon of the atoll from the west across to the gap between Pingelap Island (to the right) and Tugulu Island (to the left) on the northeast face of the atoll.

4. Village on the west face of Pingelap Island.

1–4, A. G. M., Phot.

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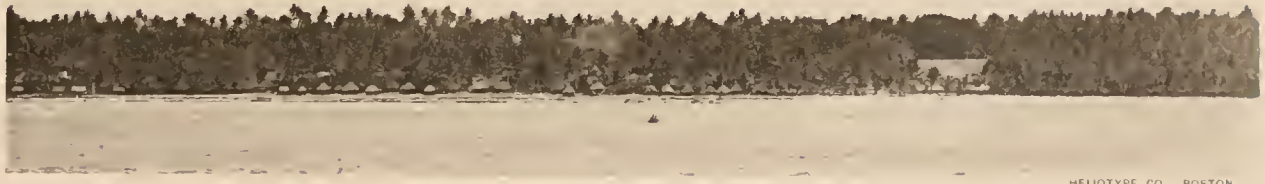

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HELIOTYPE CO., BOSTON

PLATE 184.

Plate 184.

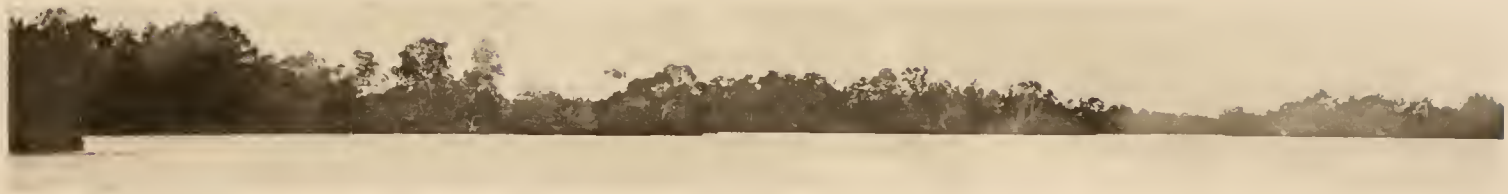
KUSAIE.

1. Vegetation on the lagoon side of the barrier reef near Point Lesson to the west of Port Lottin.

2. Vegetation on the east shore of the barrier reef on the west side of Port Lottin at the northern extremity of the harbor.

3. Looking northeast from Cape Vauvilliers along the northwest face of Kusaie, Gabert Island in the distance.

1, 2, A. G. M.; 3, W. McM. W., Phot.



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HELIOTYPE CO., BOSTON.

Plate 185.

KUSAIE.

1. Fringe of mangroves along the south face of the island to the east of Port Lottin.
2. Fringe of mangroves along the south face of the island, looking north from our anchorage.
3. Looking west from the entrance to the lagoon channel running south along the base of the island, east of Port Lottin.

1–3, A. G. M., Phot.

1

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HELIOTYPE CO., BOSTON.

3

PLATE 186.

PLATE **186**.

KUSAIE.

Vegetation along the sides of the lagoon channel of the south face of the island, looking east. A. G. M., Phot.

HELIOTYPE CO., BOSTON.

PLATE **187**.

PLATE 187.

KUSAIE.

Boulder of recent reef rock on the reef flat east of Lottin Harbor (about eighteen feet by twelve feet). A. G. M., Phot.

HELIOTYPE CO., BOSTON.

PLATE 188.

Plate 188.

PONAPI.

1. Looking north across the mouth of Port Métalanim, Nar Island on the right.
2. Looking into Port Métalanim, across the reef connecting Nar and Narcap Islands.
3. Barrier reef to the south of Métalanim, Nahanur Island in the centre.
4. Barrier reef and flat around Nahanapenlord Island.

1, 2, W. McM. W.; 3, 4, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 189.

Plate 189.

PONAPI.

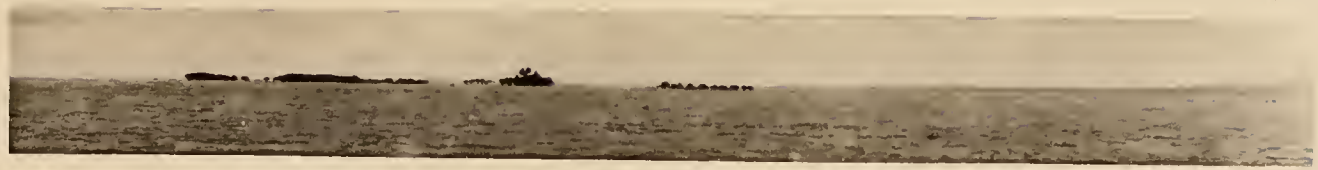
1. Panian Islands, seen from the east.

2. Nahatik islets, on the barrier reef to the east of Kiti Harbor, seen from the south, looking over the wide reef flat separating them from the mangrove fringe which extends along the south face of Ponapi.

3. Mangrove islet at the east horn of the entrance to Kiti Harbor, looking east towards Point Nantiaiti, the Panian Islands in the distance.

4. Looking northeast, over the wide reef flat towards Point Nantiaiti, inside the barrier reef, showing the black belt of mangroves fringing the south face of the island; Lucoila Peak on the left.

1-4, A. G. M., Phot.



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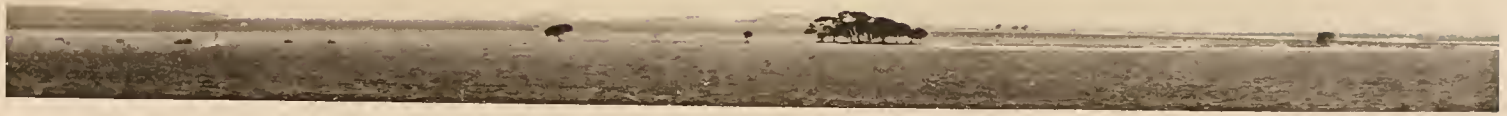

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HELIOTYPE CO., BOSTON.

PLATE 190.

Plate 190.

PONAPI.

1. Looking east from our anchorage in Kiti Harbor towards Point Nantiaiti, Peak Roie on the left, the Panian Islands in the centre, the eastern horn of Kiti Harbor on the right.

2. Looking northwest from our anchorage in Kiti Harbor, along the west face of Ponapi through the gap between Tulatik Island and the southwest point of the island.

3. East face of Narlap Island from our anchorage in Kiti Harbor.

4. Looking over the extremity of the south island and the south horn of Royalist atoll across to Lauvergne Island.

1, 3, W. McM. W.; 2, 4, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE **191**.

Plate 191.

TRUK.

1. Looking north past Faleu Island, on the southern barrier reef into the lagoon of Truk; the island of Peridiak in the distance.

2. Islands on the barrier reef of the south face of the atoll, Mesegou to the right, Uijee in the centre, next Udidan, and on the left of Uligar Pass, Fanan Island.

3. The eastern group of islands in the lagoon of Truk; the island of Umol to the right, Ruk in the centre, and Tsis to the left.

4. Uola seen across the northwest point of Ruk, from the south.

1, 3, W. McM. W.; 2, 4, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 192.

Plate 192.

TRUK.

1. Mangrove islets along the southwest face of Uola, near our anchorage.

2. Part of the west face of Uola, seen from our anchorage.

1, 2. A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 193.

PLATE **193**.

TRUK.

1. Looking south from our anchorage, Ruk on the right, Umol in the centre, Toloas on the left.

2. Looking from our anchorage towards the western group of islands in the atoll, Udot to the left, with the peaks of Tol towards the right.

3. Looking across the north end of Uola, towards Gregoire Island (on the left).

4. North end of Pis Island, seen going out of the pass, looking across the horn of the barrier reef towards the island to the east of Pis.

1, 3, 4, W. McM. W.; 2, A. G. M., Phot.

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HELIOTYPE CO., BOSTON

PLATE 194.

Plate 194.

GUAM.

1. Patay Point, east face of the island from the southeast.

2. Looking north from Punta de los Amantes, towards Point Ritidian, west face of the island.

3. Junction of the volcanic outburst with the elevated coralliferous limestone belt, west face of the island, near Agaña.

1, W. McM. W.; 2, 3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

PLATE 195.

Plate 195.

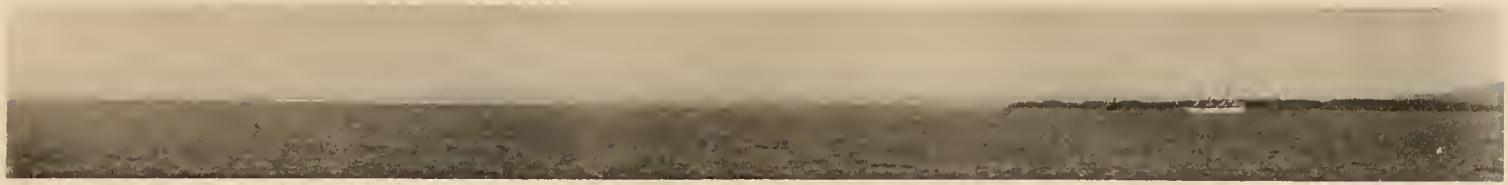
GUAM.

1. Looking over Luminan barrier reef, on the north face of the harbor of San Luis d'Apra, Cabras Island on the right, Point Ritidian in the distance.

2. Looking south from our anchorage in the harbor of San Luis d'Apra, over Oroté Peninsula, towards the southern volcanic range of Guam.

3. Elevated coralliferous limestone bluffs at the western extremity of Oroté Point, the volcanic bluffs of Point Facpi in the distance.

1, 2, W. McM. W.; 3, A. G. M., Phot.



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HELIOTYPE CO., BOSTON

PLATE 196.

Plate 196.

GUAM.

Eroded elevated coralliferous limestone on the southern face of Cabras Island, with a clump of Cycads. A. G. M., Phot.

HELIOTYPE CO., BOSTON.

PLATE **197**.

Plate 197.

GUAM.

1. Looking over the eastern extension of Oroté Peninsula towards the southern volcanic hills of Guam.

2 Volcanic hills to the east of Agaña.

1, 2, A. G. M., Phot.

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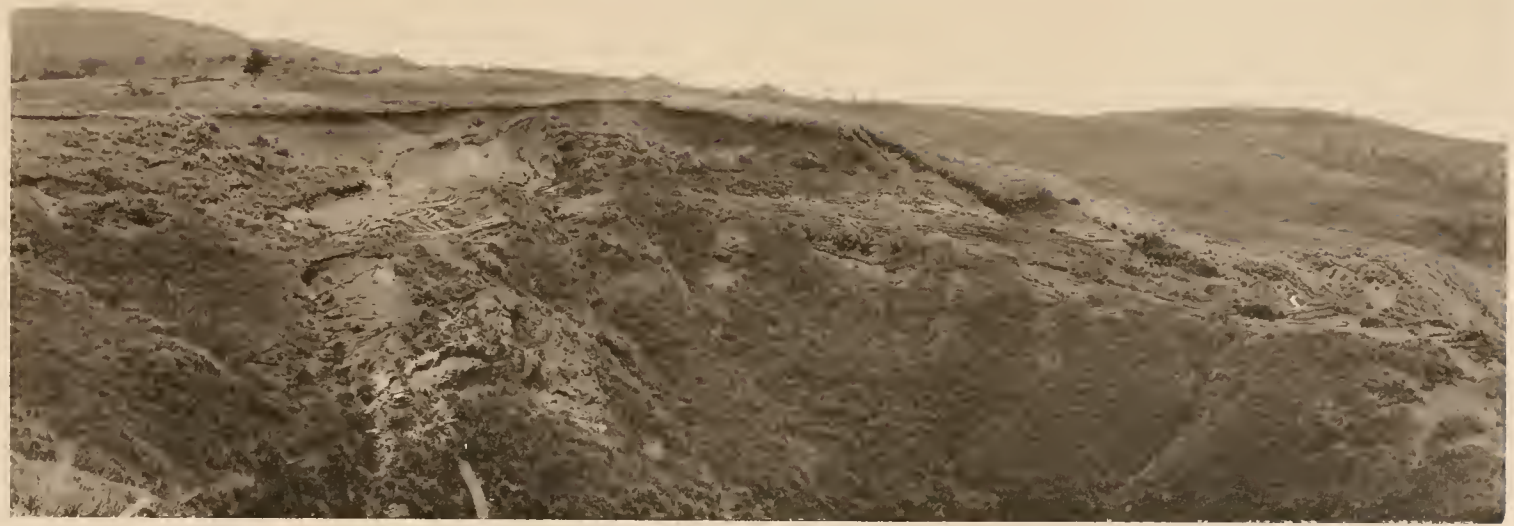

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HELIOTYPE CO., BOSTON.

PLATE 198.

Plate 198.

GUAM.

1. Volcanic bluff at Point Facpi; the islet to the right is an outlier of elevated coralliferous limestone, southwest face of Guam.

2. Looking south from Point Facpi, southwest coast of Guam; in the distance sharp volcanic hills, rounded ridge of elevated coralliferous limestone, with blocks and outliers of the same on the shore.

3. Looking over the mesa of Guam towards Mount Santa Rosa from the hill above Agaña.

1–3, A. G. M., Phot.

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HELIOTYPE CO., BOSTON.

3

PLATE 199.

Plate 199.

ROTA.

1. The west face of the island and its terraces, seen from off Point Taipingon.

2. Showing the terraces of the southwest face of the island, looking across Sosanlagh Bay.

1, 2, W. McM. W., Phot.

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HELIOTYPE CO., BOSTON

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